



Docket No.: 60,469-025 (OT-4739)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Serial No.: 09/853,339
Filed: 5/11/2001
Inventor: Fargo, et al.
Group Art Unit: 3651
Examiner: Tran, Khoi H.
Title: Escalator Support Structure

Box AF
Assistant Commissioner of Patents
Washington, D.C. 20231

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APPEAL BRIEF

Dear Sir:

Subsequent to the filing of the Notice of Appeal on April 29, 2003, Appellant hereby submits its brief. Enclosed is a credit card payment form authorizing the charge for the appeal brief fee. Any additional fees or credits may be charged or applied to Deposit Account No. 50-1482 in the name of Carlson, Gaskey & Olds.

Real Party in Interest

The real party in interest is Otis Elevator Company, the assignee of the entire right and interest in this Application.

Related Appeals and Interferences

There are no related appeals or interferences.

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Status of Claims

Claims 1 and 14 are on appeal. Claims 1-12 and 14-26 remain in the application including independent claims 1, 15, and 19. Claim 13 has been cancelled. Claims 2-12 and 15-26 are withdrawn from consideration as being drawn to a non-elected species.¹

Claim 1 stands finally rejected under 35 U.S.C. 102(e) and 35 U.S.C. 102(b). Claim 14 stands finally rejected under 35 U.S.C. 103(a).

Status of the Amendments

All amendments have been entered.

Summary of the Invention

The subject invention relates to an improved support structure for an escalator that includes at least one stamping or pre-made module. Figure 1 illustrates an escalator supported on a known truss structure 20. The truss 20 is made from multiple segments 22 of tubular steel that are cut to specified lengths. Each of these segments 22 is manually welded to adjacent segments to form the truss 20. Typically, the truss 20 includes a bottom landing structure 24, a top landing structure 26, and a rise structure 28 that interconnects the bottom 24 and top 26 landing structures. Once the truss 20 is formed, brackets are attached to the truss to support tracks, exterior cladding, and other escalator hardware (not shown). Attachment of the brackets requires additional labor and usually requires shimming so that escalator components can be properly aligned when installed, which is time consuming and expensive. Paragraph [26].

To address these problems, the subject invention utilizes a unique support structure assembly 30 for an escalator, which is shown in Figure 2. The support structure includes a bottom landing support portion 32, a top landing support portion (not shown) similar to the bottom landing support portion 32, and a rise portion 36 that interconnects the bottom 32 and top landing supports. The rise

¹ As discussed below, Appellant believes that the examiner has improperly withdrawn claims 19 through 23 from consideration.

portion 36 includes at least one module. The module is preferably made from steel and can be created using bending or stamping processes that are well known in the art. Paragraph [27].

In the illustrated examples, multiple modules are interconnected along the rise portion 36. The claims on appeal cover embodiments like that shown in Figure 11. Although multiple modules may provide support for the rise, at least one module comprises a steel sheet. In the embodiment of Figure 11, portions of the structure near machine components, include modules as support members. The illustrated example has a steel sheet 120 that preferably is welded in place, effectively covering the drive machine. The module sheet 120 replaces tubular members adjacent to the drive machine. Paragraph [32].

The steel stamping modules allow for easy assembly and installation of an escalator, especially in older buildings that are being renovated. The modules also reduce the number of brackets and attachment hardware while providing the required structural strength and stiffness. Paragraph [36].

Claim 1 is directed to a support structure assembly for an escalator and includes the following combination of features: a bottom landing support; a top landing support; and a rise for interconnecting the bottom landing support to the top landing support wherein the rise includes at least one module wherein the module comprises a steel sheet covering an escalator machine, the steel sheet presenting a continuous planar exterior surface.

Claim 14 adds the feature of the steel sheet module being welded to other portions of the rise along edges of the steel sheet such that the module completely encloses the escalator machine.

Issues

Whether the final rejection of claim 1 under 35 U.S.C. 102(e) is proper over the reference of U.S. Patent No. 6,374,981 to Gschwendtner et al. when that reference fails to disclose a steel sheet module as recited in claim 1.

Whether the final rejection of claim 1 under 35 U.S.C. 102(b) is proper over the reference of U.S. Patent No. 6,105,748 to Pallinger et al. when that reference is void of any disclosure of a steel sheet as part of a rise support structure.

Whether the final rejection of claim 14 under 35 U.S.C. 103(a) is proper over the reference of U.S. Patent No. 6,374,981 to Gschwendtner et al. alone when there is no motivation to make the proposed modification, and even if there were, the result of the modification is not the same as the claimed arrangement.

Whether the examiner's withdrawal of claims 19-23 from consideration is proper based on the argument that the claims are not directed to the elected embodiment when the claims clearly read on the elected embodiment.

Grouping of Claims

- A. The rejection of independent claim 1 is contested.
- B. The rejection of dependent claim 14 is separately contested, i.e. claim 14 does not stand or fall with claim 1.

Patentability Arguments

A. Claim 1

Claim 1 stands rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,374,981 to Gschwendtner et al. (Gschwendtner) and stands rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,105,748 to Pallinger et al. (Pallinger). It is axiomatic that in order to anticipate a claim under 35 U.S.C. 102(e), the reference must teach every element of the claim. Neither Gschwendtner nor Pallinger teach every element of claim 1.

1. Gschwendtner

Gschwendtner teaches a support structure using traditional truss supports with a supplemental support wall as part of the escalator support structure. The examiner argues that Gschwendtner discloses a rise (Figures 2 and 3) with at least one module comprising a steel plate near an escalator machine (Figures 3 and 8). The examiner further argues that Figure 2 shows that the supporting module comprises a steel sheet covering the entire supporting rise, including an escalator machine.

Gschwendtner discloses an escalator 1 with building supports 2, indicated by the vertical arrows in Figure 1. Figure 2 shows the support construction of the escalator with a framework mode of construction that consists of two wall supports connected by crossbeams. The wall supports include tension and compression trusses 12, 13, and framework struts 14. Figure 3 shows a cross-sectional view of the escalator 1 with the lefthand side representing a standard support construction with basic wall supports 4 and with the righthand side representing a reinforced support incorporating the invention. The reinforced support includes upper and lower crossbeams 6, 7, and lateral wall supports 4, 5.

Figure 4 shows that the double wall support is formed by the lateral flange mounting of the supplementary wall support 5 to the base wall support 4. The wall support is of a framework mode of construction with each support including the compression truss 12, tension truss 13, and framework strut 14. Different embodiments of the wall supports are shown in Figures 6-9.

Figure 8 shows one embodiment of the double wall supports where the supplemental wall supports 21 consist of “solid steel plates in facing contact with the basic wall supports.” Column 4, lines 10-13. The plate includes passage openings 22.

As discussed above, claim 1 requires the rise to include at least one module comprising a steel sheet covering an escalator machine. Escalator drive machines typically have been located under landings, not along the rise. There is no showing of an escalator machine anywhere in the drawings of Gschwendtner and there certainly is no showing of an escalator machine being located in the rise section of the escalator. Further, the examiner has not indicated where the escalator machine is shown or discussed in Gschwendtner and has not explained where the escalator machine is shown

in relationship to the rise. Because Gschwendtner does not teach this feature, Gschwendtner cannot anticipate claim 1.

Also, contrary to examiner's argument, Figure 2 does not show the supporting module being comprised of a steel sheet covering the entire supporting rise. Figure 2 clearly shows a truss structure. As explained above, this truss structure includes compression and tension trusses 12, 13 and framework struts 14. There is no disclosure or showing in Figure 2 of any type of steel sheet.

If the examiner is instead referring to Figure 1, Appellant would like to point out that Figure 1 does not show the support structure for the escalator. Instead, at best, Figure 1 schematically shows an outside cover over the structure of Figure 2. The Gschwendtner support structure for the escalator is clearly shown in Figure 2. As discussed above, Figure 2 shows a truss structure and does not include a steel sheet that covers any escalator machine. Further, there is no teaching in Gschwendtner that a solid steel sheet is used to replace the trusses 12, 13 and the framework strut 14 as argued by examiner. Each of the figures clearly shows that each of the lateral wall supports 4, 5 are used in conjunction with the trusses 12, 13 and strut 14 (see Figure 4). Because Gschwendtner does not teach a rise including a steel sheet covering an escalator machine, Gschwendtner cannot anticipate claim 1.

Claim 1 also requires that the steel sheet present a continuous planar exterior surface. There is no teaching in Gschwendtner of a steel sheet that presents a continuous planar exterior surface that covers the escalator machine. Figure 3 is a cross-sectional view through the center of the rise and shows handrails 11, glass side-walls 10, the conveying plates 8, guide rails 9 for the plates 8, and the support structure members 4, 5, 6, and 7. None of the support structure members 4, 5, 6, and 7 are formed from a steel sheet that presents a continuous planar exterior surface that covers the escalator machine.

Figure 8 shows a configuration where only the supplementary wall support is formed from a solid steel plate, with the supplementary wall support being subsequently connected to the base wall support. Also, the supplementary wall support of Figure 8 is clearly shown with openings 22, and thus does not disclose a steel sheet with a continuous planar exterior surface.

While it is well settled that terms in a claim are to be given their broadest reasonable interpretation, this interpretation must be consistent with the specification, with claim language being read in light of the specification as it would be interpreted by one of ordinary skill in the art. In re Bond 910 F. 2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). In interpreting Gschwendtner, the examiner has improperly expanded the meaning to be given to the claim term “continuous planar exterior surface.” As shown in Figure 11 and as described in the accompanying specification, the steel sheet presents a continuous, uninterrupted exterior surface that does not include any type of openings. One of ordinary skill in the art simply would not consider the supplementary wall support of Gschwendtner, as corresponding to Appellant’s claimed steel sheet presenting a “continuous planar exterior surface,” especially since Gschwendtner shows openings 22 in the supplementary wall support. Because Gschwendtner does not teach a steel sheet covering an escalator machine where the steel sheet presents a continuous planar exterior surface, Gschwendtner cannot anticipate claim 1.

Thus, the rejection of claim 1 under 35 U.S.C. 102(e) as being anticipated by Gschwendtner is improper and must be reversed.

2. Pallinger

Pallinger teaches an escalator bounded laterally by balustrades 5, where each balustrade 5 supports a moving handrail 6 that advances at the speed of the steps 4. A pair of support bodies 7 serves as a support for the steps 4 and includes beam lower edges 8 to which underneath bracing 9 is connected at intervals.

The examiner argues that Pallinger discloses a rise with module comprising a steel sheet 7 that covers the entire rise and escalator machine, citing Figures 1-4. Appellant disagrees. Pallinger clearly teaches the use of beams, not steel plates or sheets, in combination with the bracing 9 to form the escalator support.

As discussed above, claim 1 requires the rise to include at least one module comprising a steel sheet covering an escalator machine said steel sheet. There is no showing of an escalator machine anywhere in the drawings of Pallinger and there certainly is no showing of an escalator

machine being located in the rise section of the escalator. The conventional approach has been to place the machine beneath a landing. Further, the examiner has not indicated where the escalator machine is shown or discussed in Pallinger and has not explained where the escalator machine is shown in relationship to the rise. Because Pallinger does not teach a steel sheet covering an escalator machine, Pallinger cannot anticipate claim 1.

Claim 1 also requires that the steel sheet present a continuous planar exterior surface. There is no teaching in Pallinger of a steel sheet that presents a continuous planar exterior surface that covers the escalator machine. Thus, the rejection of claim 1 under 35 U.S.C. 102(b) as being anticipated by Pallinger is improper and must be reversed.

B. Claim 14

Claim 14 stands rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,374,981 to Gschwendtner et al. (Gschwendtner) alone. Claim 14 includes the feature of the steel sheet module being welded to other portions of the rise along edges of the steel sheet such that the module completely encloses the escalator machine.

For the reasons discussed above with regard to claim 1, Gschwendtner does not disclose the features of claim 1. Also, while the examiner argues that members 4 and 5 of Gschwendtner define the steel sheet module (citing Figure 3), Appellant would like to point out that Figure 3 must be read in light of Figures 2 and 4, which clearly explain and show that members 4 and 5 are formed as truss pieces to support the rise, and are not steel sheets that cover an escalator machine.

Also, there is no teaching of a steel sheet that is welded to other portions of the rise such that the module completely encloses the escalator machine. The embodiment of Figure 8 of Gschwendtner is clearly described as having a steel sheet with passage openings 22. Additionally, the steel sheet of Figure 8 is only for the supplementary wall support and is not described as also be incorporated into the base wall support. Further, the supplementary wall support of Figure 8 cannot be interpreted as completely enclosing the escalator machine because it includes openings 22.

While it is well settled that terms in a claim are to be given their broadest reasonable interpretation, this interpretation must be consistent with the specification, with claim language being

read in light of the specification as it would be interpreted by one of ordinary skill in the art. In re Bond 910 F. 2d 831, 833, 15 USPQ2d 1566, 1567 (Fed. Cir. 1990). One of ordinary skill in the art simply would not consider the supplementary wall support of Gschwendtner, as corresponding to Appellant's claimed steel sheet that completely encloses the escalator machine, especially since Gschwendtner shows openings 22 in the supplementary wall support.

Further, there is no teaching anywhere in Gschwendtner of any type of steel sheet module being welded to other portions of the rise along edges of the steel sheet such that the module completely encloses the escalator machine as set forth in claim 14. There would be no benefit to welding the supplemental wall support of Gschwendtner. Without any benefit, there is no motivation for the examiner's proposed modification and no prima facie case of obviousness. Thus, the rejection of claim 14 under 35 U.S.C. 103(a) is improper and must be reversed.

Withdrawal of Claims

In response to the Official Action of October 3, 2002, Appellant submitted new claims 19-26, all of which were directed toward the elected species of Figure 11. The examiner refused to consider claims 19-26, arguing that the claims were directed to at least one of the non-elected species.

Original claim 1 includes the combination of top and bottom landings with a rise interconnecting the top and bottom landings. Claim 19 also includes this combination. Claim 1 further defines the rise as including at least one module wherein the module comprises a steel sheet covering an escalator machine with the steel sheet presenting a continuous planar exterior surface. Claim 19 further defines the rise as comprising a plurality of support sub-modules formed from stamped steel sections wherein one of the support sub-modules includes a steel plate for enclosing an escalator drive machine. All of these features are clearly shown in Figure 11. Figure 11 depicts an escalator support structure with a top landing, a bottom landing, and a rise interconnecting the top and bottom landings. Figure 11 also shows that the rise portion is made from a plurality of support sub-modules with one of the support sub-modules including a steel plate for enclosing the escalator drive machine.

Appellant is permitted to add new claims in response to a non-final official action as long as the claims read on the elected species. Claim 19 clearly reads on the elected species shown in Figure 11. The examiner argues that claim 19 is directed toward a non-elected species that is shown in Figure 8. Figure 8 does not show a rise that is made from “a plurality of support sub-modules” as set forth in claim 19. Figure 8 shows the rise being formed from a single piece stamping that extends from the top landing to the bottom landing (see page 5, paragraph [28]). Thus, claim 19 does not read on Figure 8.

In the Advisory Action dated April 16, 2003, the examiner further argued that claims 19-26 were not directed to the elected invention of Figure 11 because the elected invention did not have stamped steel sections. Appellant disagrees with this characterization of the elected species of the invention.

The application clearly states that that the rise portion 36 of the subject invention includes at least one module. “The module is preferably made from steel and can be created using bending or stamping processes that are well known in the art.” Paragraph [27]. Also, the specification clearly explains, “[a]ny type of steel stamping process can be used to form the stamped modules that are used for the escalator support structure.” Paragraph [36]. Finally, Figure 11 clearly shows that the steel plate module is used in combination with other types of support modules.

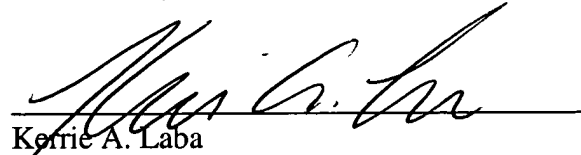
Thus, the examiner’s refusal to consider claims 19-23 is improper and Appellant respectfully requests that the claims be considered and allowed for the same reasons claim 1 is allowable.

Closing

For the reasons set forth above, the rejection of claims 1 and 14 is improper and should be reversed. Appellant earnestly requests such an action.

Respectfully submitted,

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Dated: June 26, 2003

CERTIFICATE OF MAILING

I hereby certify that the attached Appeal Brief is being deposited in triplicate with the United States Postal Service as first class mail, postage prepaid, in an envelope addressed to Box AF, Assistant Commissioner of Patents, Washington, D.C. 20231, on this 26th day of June, 2003.


Laura Combs

CLAIM APPENDIX

1. A support structure assembly for an escalator comprising:
a bottom landing support;
a top landing support; and
a rise for interconnecting said bottom landing support to said top landing support wherein said rise includes at least one module wherein the module comprises a steel sheet covering an escalator machine, said steel sheet presenting a continuous planar exterior surface.
14. The assembly of claim 1, wherein the steel sheet module is welded to other portions of the rise along edges of said steel sheet such that said module completely encloses the escalator machine.
19. A support structure assembly for an escalator comprising:
a bottom landing;
a top landing; and
a rise for interconnecting said bottom and top landings, said rise comprising a plurality of support sub-modules formed from stamped steel sections wherein one of said support sub-modules includes a steel plate for enclosing an escalator drive machine.
20. An assembly as recited in claim 19 wherein said steel plate includes a first edge attached to a first support sub-module and a second edge attached to a second support sub-module wherein said second edge is laterally spaced from said first edge such that said steel plate presents an unbroken exterior surface extending from said first edge to said second edge.
21. An assembly as recited in claim 20 wherein said steel plate completely encloses the escalator drive machine within said rise.

22. An assembly as recited in claim 20 wherein said steel plate is welded along said first and second edges to connect said steel plate to said first and second sub-modules.
23. An assembly as recited in claim 20 wherein each of said support sub-modules is attached to adjacent support sub-modules forming a rigid framework for completely supporting said top landing, said bottom landing, and said rise.